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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/029,040

12/28/2001

Joon Ha Park

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3661

9629

7590

08/03/2004

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EXAMINER

LIANG, REGINA

ART UNIT

PAPER NUMBER

2674

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DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/029,040

Applicant(s)

PARK, JOON HA

Examiner

Regina Liang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright (EP 0 315 365) in view of Katoh et al (US. PAT. NO. 5,777,591 hereinafter Katoh).

As to claim 1, Wright discloses a LCD device, comprising a LCD panel having a plurality of display cells at each intersection between a plurality of data lines and gate lines and a plurality of TFTs driving the display cells (column 2, lines 48-54), a plurality of switching devices (17-22 in Fig. 1) such that each data line is provided with at least one of the switching device, the plurality of switching device being provided in the data lines for separating the sub-matrices between the row electrodes and for switching a driving mode of the plurality of display cells to either a divisional driving mode or a non-divisional driving mode in a row direction (see col. 2, lines 12-25, col. 3, lines 7-18), a controller (see col. 3, lines 10-11, it is inherent having a controller) supplying a control signal to the switching devices to control the switching devices, and a control line (lines 23 and 24) connecting the switching devices and the controller. Wright does not disclose a plurality of switching devices provided at the gate lines for separating the sub-matrices between the column electrodes and for switching a driving mode of the plurality of cells to either a divisional driving mode or a non-divisional driving mode in column direction. However, Katoh teaches a LCD display panel having a plurality of display cells, wherein the display panel is separated into two sub-matrices between the column electrodes. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to

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modify the display panel of Wright to comprise switching devices provided at the gate lines for separating the sub-matrices between the column electrodes and for switching a driving mode of the plurality of cells to either a divisional driving mode or a non-divisional driving mode in column direction so as to provide a matrix display apparatus with a simple structure but capable of significant improvement in display image.

As to claim 2, Wright teaches a plurality of switching devices at the middle portion of the data lines.

As to claim 3, Wright teaches the control signal is either an on-selection signal (open circuit) for the divisional driving mode or an off-selection signal (close circuit) for the non-divisional driving mode.

3. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright and Katoh as applied to claim 1 above, and further in view of Negishi et al (US. PAT. NO. 5,907,314 hereinafter Negishi).

As to claim 4, Wright as modified by Katoh does not explicitly disclose the LCD device comprising a first and second source drivers and a first and second gate drivers and a timing controller. However, Fig. 11 of Negishi teaches the LCD device comprising a first and second source drivers (112, 113) and a first and second gate drivers (115, 116) and a timing controller (Fig. 12) for applying control signal to the source driver and the gate driver. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD device of Wright as modified by Katoh to have the first and second source drivers, and

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the first and second gate drivers and the timing controller as taught by Negishi to provide an improved LCD apparatus.

As to claim 5, Wright as modified teaches the plurality of switching device at the middle portion of the data lines.

As to claim 6, Wright teaches the control signal is either an on-selection signal (open circuit) for the divisional driving mode or an off-selection signal (close circuit) for the non-divisional driving mode.

***Response to Arguments***

4. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

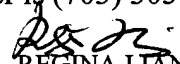
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fujikawa (US. PAT. NO. 6,545,655) teaches a LCD device and driving method thereof.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (703) 305-4719. The examiner can normally be reached on Monday-Friday from 9AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

  
REGINA LIANG  
PRIMARY EXAMINER  
ART UNIT 2674

RL  
7/22/04